

REMARKS

Entry of the foregoing amendments and reconsideration of this application is respectfully requested. Claims 1, 2, 7, 8, and 12 have been amended to more specifically set forth the invention. Claims 1, 2, and 4-15 remain in the application.

Claims 1, 2, 7, 8, and 12 have been amended to include the high frequency transmission line that is constructed and positioned to match impedances between at least one of the component on one side of the base and the circuit on the other side of the base. By placing the vias in a position to form a high frequency transmission line a fixed impedance is provided. Further, the position of the vias relative to one another determines the amount of the fixed impedance and by matching the impedance of the transmission line to either the component or the circuit (generally both of which are the same) the efficiency of the structure is greatly improved. See applicants' explanation on pages 14 and 15 of the specification. It is well known in transmission line art, for example, that the principle mode of the transmission line corresponds to the field configuration which exists at frequencies for which the spacing between the vias is appreciably less than a quarter wavelength. Thus, for example, spacing of the vias is one factor (among

several) that is considered when determining the fixed impedance as well as the frequencies being carried by the transmission line.

Claims 1, 2, and 4-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilliland et al. (U.S.P. 5,815,623). Applicants believe the amendments overcome this rejection.

All of the claims now include language that specifies vias extending through the base, with at least one of the vias grounded, so as to form a high frequency transmission line. The claims also state that the high frequency transmission line formed by the signal via and the ground via provides a fixed impedance matched to at least one of the optical component and the flex circuit.

Nothing in the disclosure of Gilliland et al. in any way suggests to one skilled in the art, vias positioned to form a transmission line connecting components within the package to circuitry outside the package. Gilliland mentions through-holes 35 in FIG. 1 as providing "retention points for the conductive traces 30" (Col. 6, line 24) or an "access point for injecting an optical filler composition" (Col. 6, lines 26-27). The through-holes illustrated in

FIG. 3 are never mentioned, numbered, or discussed. There is no indication that the through holes either carry signals or are grounded. Certainly, there is no indication of providing a grounded via adjacent a signal via to form a high frequency transmission line.

As to the mention of a flex circuit in col. 10, lines 49-50, that specific statement is referring to the embodiment illustrated in FIG. 5. A complete reading of that portion of the Gilliland et al. specification reveals that the diode 370 that they are disclosing is mounted on the lower surface of substrate 320 and light is conducted through the substrate to the optical components adjacent the upper surface. Also, the flexible circuit they mention is connected directly to diode 370, rather than by way of through-holes. No through-holes are included in the FIG. 5 embodiment. Thus, Gilliland et al. never disclose or discuss vias through a base with an optical component on one side of the base and a flex circuit on the other side.

Therefore, none of the claims 1, 2, and 4-15 read on Gilliland et al. and Gilliland et al. do not anticipate these claims. Since none of the cited references disclose the claimed structure and since Gilliland specifically does

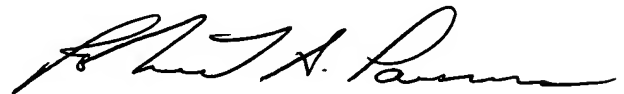
not anticipate the present invention, applicants believe that the claims are now allowable.

SUMMARY

Since Gilliland et al. do not discuss or suggest a plurality of vias extending from the first major surface of a base to the second major surface and connected to an optical component on one surface and a flex circuit on the other surface, Gilliland et al. do not anticipate the present invention. Further, Gilliland et al. do not discuss or suggest positioning the vias to form a transmission line with a fixed impedance matched to one of the optical component or the flex circuit. Therefore, applicants believe that claims 1, 2, and 4-15 are allowable and that the application is now in condition for allowance.

Should there be any questions or remaining issues regarding the foregoing, Examiner is cordially invited to telephone the undersigned attorney for a speedy resolution.

Respectfully requested,



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